

What is Dimensions of Learning and How is it Used?

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Dimensions of Learning is a comprehensive model that uses what researchers and theorists know about learning to define the learning process. Its premise is that five types of thinking -- what we call the five dimensions of learning -- are essential to successful learning. The Dimensions framework will help you to

- * maintain a focus on learning;
- * study the learning process; and
- * plan curriculum, instruction, and assessment that takes into account the five critical aspects of learning.

Dimension 1: Attitudes and Perceptions

Attitudes and perceptions affect students' ability to learn. For example, if students view the classroom as an unsafe and disorderly place, they will likely learn little there. Similarly, if students have negative attitudes about classroom tasks, they will probably put little effort into those tasks. A key element of effective instruction, then, is helping students to establish positive attitudes and perceptions about the classroom and about learning.

Dimension 2: Acquire and Integrate Knowledge

Helping students acquire and integrate new knowledge is another important aspect of learning. When students are learning new information, they must be guided in relating the new knowledge to what they already know, organizing that information, and then making it part of their long-term memory. When students are acquiring new skills and processes, they must learn a model (or set of steps), then shape the skill or process to make it efficient and effective for them, and, finally, internalize or practice the skill or process so they can perform it easily.

Dimension 3: Extend and Refine Knowledge

Learning does not stop with acquiring and integrating knowledge. Learners develop in-depth understanding through the process of extending and refining their knowledge (e.g., by making new distinctions, clearing up misconceptions, and reaching conclusions.) They rigorously analyze what they have learned by applying reasoning processes that will help them extend and refine the information. Some of the common reasoning processes used by learners to extend and refine their knowledge are the following:

- * Comparing
- * Classifying
- * Abstracting
- * Inductive reasoning
- * Deductive reasoning
- * Constructing support
- * Analyzing errors
- * Analyzing perspectives

Dimension 4: Use Knowledge Meaningfully

The most effective learning occurs when we use knowledge to perform meaningful tasks. For example, we might initially learn about tennis racquets by talking to a friend or reading a magazine article about them. We really learn about them, however, when we are trying to decide what kind of tennis racquet to buy. Making sure that students have the opportunity to use knowledge meaningfully is one of the most important parts of planning a unit of instruction. In the Dimensions of Learning model, there are six reasoning processes around which tasks can be constructed to encourage the meaningful use of knowledge:

- * Decision making
- * Problem solving
- * Invention
- * Investigation
- * Experimental inquiry
- * Systems analysis

Dimension 5: Productive Habits of Mind

The most effective learners have developed powerful habits of mind that enable them to think critically, think creatively, and regulate their behavior. These mental habits are listed below:

Critical thinking:

- * Be accurate and seek accuracy
- * Be clear and seek clarity
- * Maintain an open mind
- * Restrain impulsivity
- * Take a position when the situation warrants it
- * Respond appropriately to others' feelings and level of knowledge

Creative thinking:

- * Persevere
- * Push the limits of your knowledge and abilities
- * Generate, trust, and maintain your own standards of evaluation
- * Generate new ways of viewing a situation that are outside the boundaries of standard conventions

Self-regulated thinking:

- * Monitor your own thinking
- * Plan appropriately
- * Identify and use necessary resources
- * Respond appropriately to feedback
- * Evaluate the effectiveness of your actions

Briefly, as the graphic in Figure A.1 illustrates, all learning takes place against the backdrop of learners' attitudes and perceptions (Dimension 1) and their use (or lack of use) of productive habits of mind (Dimension 5). If students have negative attitudes and perceptions about learning, then they will likely learn little. If they have positive attitudes and perceptions, they will learn more and learning will be easier. Similarly, when students use productive habits of mind these habits facilitate their learning. Dimensions 1 and 5, then, are always factors in the learning process. This is why they are part of the background of the graphic shown in Figure A.1.

When positive attitudes and perceptions are in place and productive habits of mind are being used, learners can more effectively do the thinking required in the other three dimensions, that is, acquiring and integrating knowledge (Dimension 2), extending and refining knowledge (Dimension 3), and using knowledge meaningfully (Dimension 4). Notice the relative positions of the three circles of Dimensions 2, 3, and 4. (See Figure A.1). The circle representing meaningful use of knowledge subsumes the other two, and the circle representing extending and refining knowledge subsumes the circle representing acquiring and integrating knowledge. This communicates that when learners extend and refine knowledge, they continue to acquire knowledge, and when they use knowledge meaningfully, they are still acquiring and extending knowledge. In other words, the relationships among these circles represent types of thinking that are neither discrete nor sequential. They represent types of thinking that interact and that, in fact, may be occurring simultaneously during learning.

It might be useful to consider the Dimensions of Learning model as providing a metaphor for the learning process. Dimensions of Learning offers a way of thinking about the extremely complex process of learning so that we can attend to each aspect and gain insights into how they interact. If it serves this purpose, it will be a useful tool as we attempt to help students learn.

Uses of Dimensions of Learning

As a comprehensive model of learning, Dimensions can have an impact on virtually every aspect of education. Because the major goal of education is to enhance learning, it follows that our system of education must focus on a model that represents criteria for effective learning, criteria that we must use to make decisions and evaluate programs. Although Dimensions is certainly not the only model of learning, it is a powerful tool for ensuring that learning is the focus of what we do as educators. It should validate current efforts in schools and classrooms to enhance learning, but should also suggest ways of continuing to improve. Although individuals, schools, and districts should use the model to meet their own needs, it might be helpful to understand a number of possible ways in which the Dimensions of Learning model might be used.

A Resource for Instructional Strategies

At the most basic level, this manual has been used as a resource for research-based instructional strategies. Although there are many effective strategies included in the manual, it is important to remember that the manual is not the model. As the strategies are used, they should be selected and their effectiveness measured in terms of the desired effect on learning. The implication is that even at this basic level of use, it is important for teachers to understand each dimension as they select and use strategies.